

covering its obstacles with direct fires.

This MOD minefield would help give the commander obstacles in depth in his sector and could allow him the time to reposition other tank-killing forces to close a penetration and destroy the enemy forces. It would be advantageous for him to use his antitank reserves in close coordination with the MOD while it is placing the minefields. These antitank reserves would then be in a good position to place effective fires on enemy armored vehicles as they

were slowed by the obstacles. The anti-tank weapon systems could come from the repositioned systems in the screening force and combat outpost units.

Engineers, as part of the maneuver team, have a unique combat power that other combat arms do not have available to them in large quantities—mines that can kill Soviet tanks. Both Engineer and maneuver commanders must plan for and use Engineers as a combat multiplier. The MOD is one example of a way to do this, and others

can be developed by these commanders if they work as an integrated team and coordinate their efforts. With well trained forces, this will guarantee success.

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Platoon Live Fire Ambush

LIEUTENANT CHRIS G. PAPPAS

During its division's FTX Golden Eagle 87 at Fort Campbell, Kentucky, Company C, 3d Battalion, 187th Infantry, 101st Airborne Division (Air Assault) was tasked with developing a platoon live fire ambush range. Although numerous field manuals and circulars adequately describe ambush techniques, the results we found down-range on our live fire ambush targets not only taught us some valuable lessons, they also brought to light some interesting trends.

The ambush target we used consisted of two ranks of E-type plastic silhouettes located along the military crest of a ridge. We placed seven silhouettes in the front rank and six in the rear, and kept a four-foot space between the silhouettes in each rank. We placed the two ranks of targets 15 meters apart and staggered them both in width and in depth to simulate a squad moving in a modified wedge formation. We also attached a four-inch red balloon to the center of mass of each silhouette to provide a distinct aiming point, to create

shooter interest, and to allow the evaluation of each platoon's marksmanship performance.

We located our ambush position 85 meters from the ambush target on a parallel ridge. The ambush target was connected by cables that led to a road outside the safety fan. There, a soldier pulled on the cables to create a moving ambush target, and walked backward to move the target in a slow, hesitating manner. We intended from the beginning to create a realistic range bounded only by prudent safety constraints.

POSITION

In addition to the marksmanship involved, we evaluated each platoon on its reconnaissance and occupation of the ambush position. To avoid a "range mentality" as much as we could, we began a platoon's evaluation when it entered the objective rally point (ORP) and ended it with the cease fire. The evaluators fully camouflaged

themselves and acted at all times in a quiet, tactical manner.

Leaving the company assembly area, a rifle platoon crossed the line of departure at a specified time and linked up with the safety officer, who acted as a scout at the ORP. There the scout updated the platoon's key leaders on the enemy situation and conducted a thorough safety briefing.

While the scout guided the leaders' reconnaissance element forward to the ambush position, the platoon sergeant issued ammunition to the members of the patrol—10 rounds of 5.56mm ball to each rifleman, 50 rounds of 5.56mm NATO linked to each automatic rifleman, and 50 rounds of 7.62mm to each M60 gunner. He also issued two M18A1 claymores with which to initiate the ambush.

The scout stopped the leaders' reconnaissance party 50 to 75 meters short of the ambush position and pointed out the range limits to the platoon leader. Each platoon then emplaced its flank security and established communica-

tions according to the platoon's procedures. The platoon leader was then free to conduct his reconnaissance using his own technique.

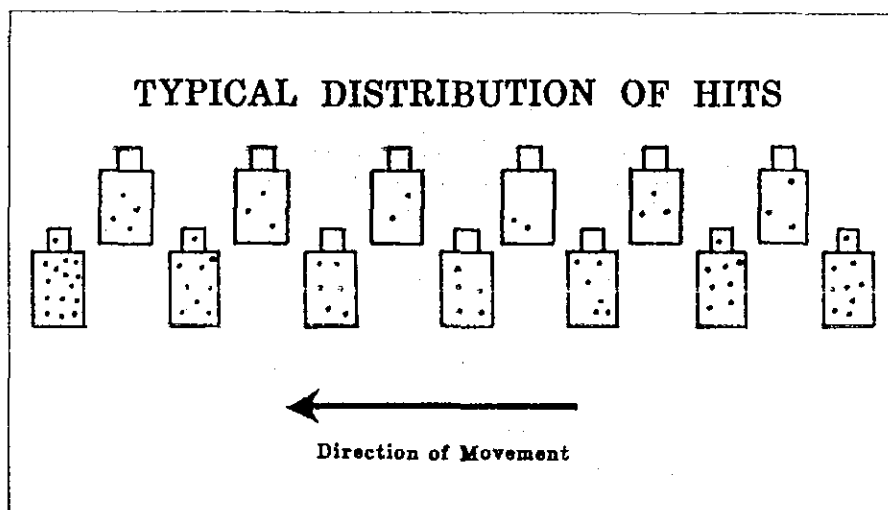
After occupying their positions, a platoon leader and his squad leaders tactically designated the sectors of fire. The evaluators checked each sector to ensure complete safety, the platoon's leaders checked their final positions, and the designated platoon members emplaced the claymore mines.

To closely simulate the terrain and vegetation that might be encountered in a battle zone, we chose for our range a heavily wooded location with hardwood trees and underbrush. The potential for ricochets, therefore, posed a special problem and required that we check carefully both the firing positions and the sectors of fire.

For the actual exercise, we deviated in three ways from what we considered a realistic tactical situation. First, the flank and rear security teams did not receive ammunition, because if they fired from their positions they would create an extreme angle of fire, thereby causing their bullets to hit outside the range safety fan. Second, the claymore sites were selected, dug, and ringed with sandbags before a platoon occupied them. We concealed the claymore pits on the military crest, because the rather short (33-meter) firing wire limited their location. Finally, the soldiers were not allowed to load their weapons until the claymores had been emplaced and all the sectors of fire had been checked by the evaluators.

Our evaluation standard allowed a platoon 15 seconds after it initiated its ambush to engage and destroy the moving targets. This time limit was intended to encourage the violent massing of fires necessary to kill the enemy quickly. The evaluation criteria required a platoon to hit 10 or more of the 13 targets at least three times each. During the 15-second ambush, this translated into 30 hits from the total of about 500 rounds and two claymores (with 1,400 pellets total) that we had issued to the platoon.

The standard was not difficult to achieve, but the platoons' results proved surprisingly similar. For exam-



ple, the targets in the front ranks were hit two to three times more frequently than those in the rear rank. The "point man" was hit twice as many times as any other target in the front rank. (The accompanying sketch shows a typical array of hits by a platoon's weapons.)

We also found a noticeable difference in the hits by various weapons. The claymore proved to be the most effective, with its steel pellets penetrating every target in the kill zone. The M16 rifles and squad automatic weapons (SAWs) accounted for about one-third of the total hits. We were surprised that the M60 machinegun provided the fewest hits. Most platoons achieved only one to three hits with their machineguns, and the platoons using the tripod and pintle did not achieve any more hits than those using only the bipod.

OBSERVATION

Our ammunition NCO made another interesting observation: The platoons that turned in the most unfired ammunition had scored the most hits. In other words, the platoons that fired the most ammunition hit the fewest balloons.

The results led us to a number of conclusions:

- First, well-defined sectors of fire were mandatory, but, just as important, they had to overlap. This was demonstrated time and again as the center and rear targets received the fewest hits.

- Second, weapon effectiveness was directly proportional to a soldier's level of training, and the various weapon systems proved complementary in their capabilities. The claymore was devastating, with a tendency to shoot low. The M16 was the most effective when it was carefully aimed and fired in the semi-automatic mode. On fully automatic, the M16 hit high with frequent bullet strikes 20 feet up in the trees. The M249 SAW was exceedingly reliable and offered a high probability of hit when fired in two- or three-round bursts; it also proved to be an outstanding addition to the squad's firepower. The M60's poor showing may have resulted in part from its awkwardness in a fast-moving, close-range environment. More important, our M60 gunners usually trained on live fire qualification ranges that emphasized long-range targets.

- Finally, marksmanship and fire discipline again proved to be vital components of effective and efficient target engagement. Five hits from five rounds fired in 15 seconds was preferable to 10 quick misses.

From these conclusions, we recommended several areas of emphasis for training for the platoon ambush:

- We must have continuous, overlapping fires to defeat the enemy; otherwise, he will use these gaps to his advantage. We must also bear in mind that sectors of fire have both height and depth.

- The ambush must be rehearsed. MILES is an outstanding training tool that allows the concurrent training of

battle drills for reacting to near and far ambushes.

- We must develop and refine standard unit procedures to address these tactical considerations.

- We must improve the quality of our marksmanship training, because weapon proficiency forms the very foundation of an infantryman's strength. Toward that end, we must place more emphasis on firing our weapons in various settings. Although qualification ranges are important,

they should make up only a part of a marksmanship program. Known distance firing does develop shooting fundamentals, provide downrange feedback, and instill in us confidence in our weapons. But we must also use special ranges that have been tailored to unique missions such as this platoon live fire ambush.

Tomorrow's battlefield will have indistinct boundaries, and battle in depth will be the norm. An ambush offers one of the most efficient

methods of fighting outnumbered and winning. Imagination and a little work can provide realistic training for this method of fighting. Incorporating these lessons and recommendations will increase our combat readiness.

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Mortars in Urban Combat

LIEUTENANT RICHARD F. STEINER

Commanders operating in conventional environments are accustomed to quick, responsive, and effective indirect fire from their mortar platoons. Faced with operating in an urban environment, however, these same commanders are likely to see a significant reduction in the effectiveness of their mortar platoons.

As leader of a mechanized infantry 81mm mortar platoon in the Berlin Brigade for the past year, I have noted several problems unique to an urban environment that substantially reduce my mortars' ability to provide effective fire support. Most of these problems do not apply when attacking a built-up area from open terrain, but all of them arise to some degree when fighting within a built-up area.

These problems include interference with radio communications, reduction of weapon range, reduction of ammunition effectiveness, increased difficulty in acquiring and hitting targets, increased ammunition expenditures with the attendant strain on supply and transportation systems, unrealistic tar-

get planning, and difficulties the mortar platoons themselves have in operating in a new and difficult environment. (See also "Mortars: Able to Leap Tall Buildings," by Captains Stewart H. Goesch and Robert A. Lambert, *INFANTRY*, July-August 1985, pages 38-40; "Mortars in MOUT," by Major Thomas H. Whitley and Captain Carl W. Riester, *INFANTRY*, September-October 1983, pages 37-38; and "Mortars in Cities," by Captain William B. Crews, *INFANTRY*, March-April 1983, pages 13-15.)

These limiting factors do not totally negate the effectiveness of mortars though. In fact, the very high angle of fire of a mortar round can make it extremely useful in urban terrain. But urban terrain varies in density and construction materials, which can cause variations in the effectiveness of mortar fire, and operational requirements can affect the employment and capability of mortars.

Communications. The canyon-like nature of heavily urbanized inner city terrain can severely limit the range of

FM radios. A commander or FIST element calling a fire mission often needs an RC-292 antenna or a powerful vehicle-mounted radio. All the FDC vehicles in my battalion, for example, are equipped with VRC-47s because GRC-160s are not powerful enough.

In the defense, wire communication should be used whenever possible because of its increased reliability and security. Civilian telephones can also provide reliable communications, but they are not secure.

Range of Weapons Systems. Tall, well-constructed buildings offer excellent protection against counter-battery fire and enemy air attack. Because of this, unit mortar SOPs in Berlin call for locating firing sections close to tall concrete and stone buildings, with FDCs operating from nearby basements. Unfortunately, to fire over these buildings, a platoon has to use high minimum elevations.

For an 81mm mortar, our standard minimum elevation (based on being within 40 meters of a building at least three stories tall) is 1331 mils. This